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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/776,894	MINHAZUDDIN, MUNEYB	
	Examiner	Art Unit	
	ANDREW LAI	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-14,16-26,28-36 and 38-44* is/are rejected.

7)☒ Claim(s) *5,6,15-17,20,27,28,37-39 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/14/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Examiner's Notes

Applicant filed an RCE on 10/7/2008 in response to Examiner's Advisory Action of 9/29/2008 which indicated new issues and non-persuasive arguments of Applicant's After-Final amendment filed on 9/9/2008.

Applicant's RCE of 10/7/2008 does not contain a claim list. Therefore, it is noted hereby that the claims to be examined in this Office Action are the claims filed with Applicant's After-Final amendment of 9/9/2008.

Also, Applicant's RCE of 10/72008 does not contain further arguments/remarks. Therefore, it is noted hereby that Applicant's position regarding previous Office Actions are taken from the Remarks of Applicant's After-Final amendment of 9/9/2008, and those remarks/arguments have been fully addressed in Examiner's Advisory Action of 9/29/2008 and deemed non-persuasive.

Claim Objections

1. Claims 5/27 and 14/17/36/39 are objected to because of the following informalities:

Claims 14/17/36/39 all recite "... *Multi-Protocol Lavel Switching*" (emphasis added). It should be changed to "...*Multi-Protocol Label Switching*". Appropriate correction is required.

Claims 5/27 all have various sub-steps denoted as, e.g., "*(B1), (B2), (B3), (B3i)* and *(B3ii)*" for the step "*(b)*" of claims 1/23. In order to maintain a better notation consistency, Examiner recommends change claims 5/27 to use lower case letter "b" instead of upper case "B", namely, denote sub-steps as "*(b1), (b2), (b3), (b3i)* and *(b3ii)*".

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 43 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 43 recites, among other features, the limitation of "... *providing access to at least first and second wide area network links, the first network link being less expensive to use than the second network link; ... when the bandwidth utilization level on the first network link is less than the selected threshold, redirecting outgoing voice calls over the first network link*" (emphasis added). Here, it is noted that the *first link*, as claimed, is a "cheaper" link and the *second link* is a more "expensive" link, and the claim essentially says to redirect traffic to the cheaper link when link utilization thereof is less than a threshold value.

This appears to be a new matter issue because Applicant's Specification appears to be teaching away from the above. The second paragraph of page 18 of the Specification discloses, "The WAN keeper monitors the default (cheaper) link for bandwidth utilization. Upon utilization being less than its threshold limit (the maximum threshold), the WAN keeper will take measures so that future outgoing voice calls will be directed to the expensive link" (emphasis added). This clearly says to redirect traffic to the expensive link when utilization of the cheaper link is less than a threshold value, exactly contradictory to claim 43.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 7-9, 12, 18-21, 23-26, 29-31, 34, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al (US 7,023,839, Shaffer hereinafter) in view of Graham et al (US 6,097,722, Graham hereinafter) and further in view of Johnsson (US 2002/0006131).

Shaffer discloses "system and method for dynamic codec alteration" (col. 1 lines 1-2) in "telecommunication systems" (col. 1 lines 16-17 and fig. 1) comprising the following features:

- **With respect to Independent claims 1 and 23**

Regarding claims 1, *a method for performing call admission control* (refer to fig. 1 and see "the H.323 gateway 106 generally provides ... and performs call setup and clearing", col. 4 lines 41-44, see further, e.g. fig. 6 depicting "ARQ 602" for call Admission Request), *comprising: …*

Regarding claim 23, *a call admission controller* (refer to fig. 1 "gatekeeper 108 and "BWAS [bandwidth allocation server] 109"), *comprising:*

a processor (fig. 3 "control processor 302") *operable to …*

Regarding claims 1/23: *(a) determining/determine* for the system *at least one of (i) a bandwidth utilization level* (refer to fig. 1 and see "the BWAS [bandwidth allocation server] 109 monitors system bandwidth usage"*, and (ii) an available bandwidth level* ("the BWAS 109 calculates the remaining network bandwidth", col. 6 line 21) *and one or more Quality of Service or QoS metrics* ("the BWAS 109 saves the requested QoS

levels for existing calls as well as the actual QoS level being provided", col. 9 lines 28-30);

(b) comparing/compare the determined at least one bandwidth level to one or more selected thresholds (generally see "BWAS 109 can measure and track the network traffic to make the determinations of the relevant thresholds being crossed", col. 5 lines 23-25, and particularly see "compares the system bandwidth usage against the threshold value X", col. 5 line 67 - col. 6 line 1, and "[check] if the threshold X were to be exceeded such that 1 Mbps network bandwidth is remaining", col. 6 lines 34-35. It should be noted that Shaffer also discloses further that "if one or more new calls require a higher QoS, then the BWAS 109 determines whether lower QoS calls may be reset", col. 5 lines 30-33. This suggest that QoS may also be taken into account when performing call admission) *to determine whether a new live voice communication* ("performs call setup and clearing on both the LAN side and switched circuit network (e.g., public switched telephone network or PSTN) side", col. 4 lines 43-45, noting "PSTN" deals with *live voice communications*) *may be set up with a first selected codec* ("the BWAS 109 monitors system bandwidth usage and directs each H.323 terminal to adopt a particular codec or coding algorithm according to bandwidth availability", col. 3 lines 5-8);

(3) when a new live voice communication may not be set up with the first selected codec (fig. 8 step 806 "BW [bandwidth] Avail ?" and associated "No" branch), *performing at least one of the following steps:*

(i) selecting/select a second different codec from among a plurality of possible codecs for the new live coice communication, wherein the second codec has a lower bit rate than the first codec;

(ii) changing/change an existing live voice communication from the first codec to the second codec; and

(iii) redirecting/reditect the new live communication from the first path to a second different path, wherein the second path does not include the first link

(fig. 8, continuing along above cited "No" branch, at step 812 where it is checked "if there exist connections whose QoS is presently more than needed or requested", col. 9 lines 44-46, and if "No", step 816 "make call with lower codec speed"; or if “Yes”, step 814 “re-negotiate codec speed” for *existing communications* as further explained "If, however, the existing connections may be downgraded, the renegotiate lower codec speed process is undertaken in a step 814, ... and the call is made (step 808)", col. 9 lines 51-54).

Shaffer does not expressly disclose, regarding claims 1/23, that the step (a) determining/determine one of the bandwidth utilization level, available bandwidth level, and QoS metrics is with respect to *a* particular *path including a* particular *link.*

Graham discloses “bandwidth management processes and systems for asynchronous transfer mode networks using variable virtual paths” (col. 1 lines 1-4) wherein call “connection admission control” (col. 2 line 36) is implemented, comprising determining available bandwidth level with respect to *a particular path including a particular link* ("when a virtual channel connection is requested, it must be placed in a

virtual path, so that the CAS software can determine if there is enough bandwidth Remaining in the virtual path to support the new virtual channel connection", col. 2 lines 36-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method/system of Shaffer by adding the path specific bandwidth determining mechanism of Graham to Shaffer in order to provide more efficient system "which allows for greater use of the available capacity of networks, and particularly, transmission facilities with a network" (Graham, col. 4 lines 24-26).

Although Shaffer has disclosed considering comparing bandwidth limitation in call admission to one or more thresholds and suggested considering also QoS, neither does Shaffer nor Graham expressly disclose, regarding claims 1 and 23, such comparison takes into account bandwidth information *and* (in combination with) *one or more Quality of Service or QoS metrics* for call admission.

Johnsson discloses "arrangement for establishing connections through a network" (Title) based on bandwidth, which "means the number of bits per second that can be transmitted by a user of the connection" ([0004] lines 5-7), and QoS "in terms of end-to-end delay and delay variation, packet loss ratio, etc." ([0004] last two lines). Johnsson's disclosure comprises:

Regarding claims 1 and 23, *comparing available bandwidth level for the first path and one or more Quality of Service or QoS metrics* [to certain thresholds] ("resources have to be allocated in the network to assure that each individual end-to-end AAL2 connection, for each direction is assigned a certain amount of bandwidth and

that a certain level of quality of service (QoS) can be guaranteed for that connection", [0004] lines 1-5, emphasis added).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the method/system of Shaffer by adding bandwidth availability in combination with QoS factors of Johnsson in call admission in order to provide a refined call control mechanism which guarantees "that appropriate resources are available to ensure that the network can guarantee the bandwidth and the QoS associated with the connection" (Johnsson, [0005] lines 2-5, emphasis added).

- **With respect to Dependent claims**

Shaffer discloses the following features:

Regarding claims 2/24, *(c) (i) is performed and further comprising: receiving a request to place the live voice communication* (fig. 6 step 602 "ARQ" or "Admission Request");

setting up the live voice communication with the second codec (fig. 8 step 816 "make call with lower codec speed").

Regarding claims 3/25, *wherein each of a plurality of codecs has a corresponding bit rate and/or required utilization threshold* ("although the G.711 codec is the mandatory audio codec for an H.323 terminal, other audio codecs, such as G.728, G.729, G.723.1, G.722, MPEG1 audio, etc. may also be used", col. 3 lines 52-55, which codes are well known in the art to have different *bit rate* which in tern *require corresponding bandwidth level*) *and the selecting step comprises: comparing at least one of the available bandwidth level and the bandwidth utilization level with the plurality*

of bit rates and/or utilization threshold ("if one or more new calls require a higher QoS (i.e., bandwidth), then the BWAS 109 determines whether lower QoS calls may be reset to still lower QoS codec", col. 5 lines 30-33); *and*

selecting the highest quality codec having a corresponding bit rate and/or utilization level permitted by the at least one of the available bandwidth level and the bandwidth utilization level ("the BWAS 109 may send an RAS command or H.245 signaling to the H.323 terminals to step down to the next fastest coding algorithm", col. 7 lines 45-47).

Regarding claims 4/26, *wherein the comparing comprises:*

comparing at least one of (i) a bandwidth utilization level and (ii) an available bandwidth level with one or more selected thresholds; and comparing one or more Quality of Service or QoS metrics with one or more selected thresholds (see discussion above regarding claims 1/23), *wherein the second codec has a bandwidth usage characteristic sufficient to satisfy the comparing steps* ("the BWAS 109 may send an RAS command or H.245 signaling to the H.323 terminals to step down to the next fastest coding algorithm", col. 7 lines 45-47, noting that to be able to identify "the next fastest" codec, the codecs have to have *bandwidth usage characteristic sufficient* for *the comparing steps*).

Regarding claims 7/29, *wherein substep (c)(ii) is performed* ("if the difference between the QoS levels meets a threshold, then the existing call(s) will have its (or their) codecs renegotiated to a lower level", col. 8 lines 65-57).

Regarding claims 8/30, *wherein, when the existing live voice communication was set up, the first and second codecs were identified as being acceptable to both endpoints.*

Regarding claims 9/31, *wherein substep (c)(ii) comprises: renegotiating with destination the codec to be used in the live voice communication.*

("the BWAS ... monitors bandwidth usage, and if there is a disparity between the bandwidth allocated to new connections versus ongoing ones ... the BWAS sends a lower codec speed message to all active H.323 entities. This causes the H.323 entities to renegotiate their codecs. The original calling party then selects a lower Speed codec and sends a message to the called party to proceed with H.323 codec negotiation", col. 2 lines 9-17. It should be noted that the fact both parties were in "ongoing" call indicates that a first codec was accepted by both, and the "renegotiation" indicates that a second (and lower speed) codec is also accepted by both).

Regarding claims 12/34, *wherein in the determining operation the bandwidth utilization level is determined* (refer to figs. 1 and 3 and see "the BWAS 109, in particular the bandwidth monitor 306, proceeds to monitor system bandwidth usage", col. 5 lines 62-64).

Regarding claims 18/40, *wherein one or more QoS metrics is determined* (fig. 8 step 800 "receive QoS levels").

Regarding claim 21, *a computer readable medium* (fig. 3 "memory 308") *having processor executable instructions stored thereon that, when executed, perform the steps of claim 1* ("The control processor 302 is couple to a memory 308 which is used to

store bandwidth threshold information", col. 5 lines 8-10, noting that said "threshold information" is used to *perform the steps of claim 1* as already discussed above with respect to claim 1).

Shaffer does not expressly but Graham does disclose:

Regarding claims 18/40, QoS is determined *for the first path*, or in other words *path*-specifically determined (refer to fig. 1A and see "virtual paths are grouped or pooled together for Clients A and B by a number of factors, such as Quality of Service (QoS) and bandwidth", col. 5 lines 29-31).

Johnsson does not expressly but Johson does disclose:

Regarding claims 19/41, *wherein one or more QoS metrics is at least one of packet delay, jitter, packet loss, the availability of Differential Services Code Point and RSCP status* ("QoS can be expressed in terms of end-to-end delay and delay variations, packet loss ratio, etc.", [0004] last two lines).

6. Claims 10/32 and 11/33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer in view of Graham and Johnsson as applied to claims 1, 2, 23 and 24 above, and further in view of Ho (US 6,452,922).

Shaffer in view of Graham and Johnsson discloses claimed limitations in section 5. Shaffer in view of Graham and Johnsson does not expressly disclose the features of claims 10/32 and 11/33.

Ho discloses that "an apparatus causes alternate connection of a telephone call directed an IP network" (Abstract lines 1-2) employing separate "IP interface" card and "PSTN interface" card (fig. 1 items 104 and 102). Ho's invention comprises:

Regarding claims 10/32, *wherein substep (c)(iii) is performed* [note: substep (c)(iii) recites *redirecting/redirect the new live voice communication from the first path to a second different path wherein the second path does not include the first link*] (refer to fig. 1 and see “a network interface card 104 … will cause a call directed to the card to be redirected to a different network 106 if the QoS for the call will be below the desired threshold”, col. 2 lines 41-45).

Regarding claims 11/33, *wherein the first link corresponding to a first set of port numbers and the second link to a second set of port numbers, wherein the first and second sets of port numbers are non-overlapping, wherein packets addressed to one of the first set of port numbers are directed along the first link and packets addressed to one of the second set of port numbers are directed along the second link* (refer to fig. 1 wherein "call processor 100" comprises two separate, thus *non-overlapping*, ports communicating via two separate, thus *non-overlapping*, *links* with two separate, thus *non-overlapping*, network "interface" cards, i.e. “IP” and "PSTN”. It is obvious as well as intuitive to one skilled in the art to appreciated for said separate or *non-overlapping ports* to have separate, thus *non-overlapping*, *first and second sets of non-overlapping port numbers*) *and wherein the redirection step comprises:*

selecting/select for the packetized live voice communication a port address (note that it is well known in the art that each port in a multi-ports communication unit, such as the “call processor 100” cited above, is identified by *a port address* or certain type of port ID) *from the first set of port numbers when a new live voice communication can be set up with the first selected codec and*

selecting/select for the packetized live voice communication a port address from the second set of port numbers when a new live voice communication cannot be set up with the first selected codec.

(still refer to fig. 1 and see "If the QoS that the IP network 1 108 has provided recently for test packets to be destination of the call to be routed is less than the desired QoS threshold, then the call is returned to the call processor 100 to be connected through another network 106 [noting that call to networks 108 and 106 uses above cited separate *ports, interfaces and links*]. Otherwise, the call is connected through the IP network 108).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the method/system of Shaffer by adding the call redirection mechanism of Ho to Shaffer in order to provide more robust system capable of "monitoring the quality of service (QoS) of the IP network and connecting a telephone call over an alternate network, on a call by call basis" (Ho, col. 1 lines 60-62) which would offer an important improvement to overcome the "disadvantage of VoIP Networks" having the "variability of the quality of the signal received at the destination as determined by changing network conditions" (Ho, col. 1 lines 42-44).

7. Claims 13/35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer in view of Graham and Johnsson as applied to claims 1 and 23 above, and further in view of Lachman, III et al (US 2002/0166063, Lachman hereinafter).

Shaffer in view of Graham and Johnsson discloses claimed limitations in section 5 above.

Lachman discloses “system and method for anti-network terrorism” (page 1 left column lines 1-2) using “a graph generated by Multi-Router Traffic Grapher (MRTG)” ([0140] lines 3-4).

Shaffer in view of Graham and Johnsson does not but Lachman does disclose:

Regarding claim 13/35, *wherein the bandwidth utilization level is determined by polling a local edge router* (refer to fig. 17, which "illustrates a man screen GUI for a central monitoring station", [0038] lines 1-2, and see "through block 1704, the MRTG can poll the Router's SNMP data and can chart the relative inbound/outbound bandwidth utilization”, [0156] lines 4-6. It should be noted that knowing *bandwidth utilization* is equivalent to knowing *available bandwidth* because the latter is merely total bandwidth less the former).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Shaffer by adding the particular bandwidth monitoring method of Lachman to Shaffer in order to provide a better protected system “that can monitor incoming data packets fro a number of routers on a host network and that can detect a flood attack on an of the routers” (Lachman, [0014] lines 16-18).

8. Claims 14 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer in view of Graham and Johnsson as applied to claims 13 and 35, and further in view of Garg et al (US 2004/0008627, Garg hereinafter).

Shaffer in view of Graham and Johnsson discloses claimed limitations discussed in section 7 above. Shaffer further discloses:

Regarding claims 14/36, *wherein the bandwidth utilization level is the end-to-end bandwidth* (since Shaffer discloses *end-to-end* codec negotiations, i.e. between calling and called parties, based on *bandwidth utilization level* monitoring, said *bandwidth utilization level* will also have to be *end-to-end*).

Shaffer in view of Graham and Johnsson does not disclose, regarding claims 14/36, *determining* said end-to-end bandwidth *using at least one of Reservation Protocol messages, Path Differentiated Services, and Multi-Protocol Label Switching.*

Garg discloses “method and apparatus for performing admission control" (Title) utilizing “access points” (figs. 1 and 2) having “flow monitor” and “bandwidth and admission controller/enforcer” (fig. 3) wherein “a VoIP call can be established with a device only if the network has sufficient resources to accommodate the call or it is possible to make such resources available by curtailing ongoing data connections" (Abstract lines 2-5). Garg’s invention comprises:

Regarding claims 14/36, *determining* end-to-end bandwidth *using at least one of Reservation Protocol messages, Path Differentiated Services, and Multi-Protocol Label Switching* (refer to fig. 3 and see “the access point 200 includes a flow monitor 310 that monitors the traffic to and from the wireless network, classifies the traffic into flow and computes the bandwidth of each flow. A scan/signal engine 320 detects traffic intended to establish a VoIP flow using various means, for instance by leveraging Resource Reservation Protocol (RSVP)”, [0058] lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Shaffer by adding the Resource Reservation Protocol of

Garg for determining bandwidth in order to provide a better system that overcomes prior art problem "which leads to unacceptable packet loss for all VoIP streams transmitted from the access point to a client resulting in poor call quality for all connections." (Garg, [0006] lines 11-14).

9. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al (US 2003/0088698, Singh hereinafter) in view of Garg.

Singh discloses “an approach to rapid failover of a communication path between computers that are linked by redundant virtual links” (Abstract lines 1-2) comprising the following features:

Regarding claim 43, *a method* (“an approach” cited above), *comprising:*

providing access (fig. 2 see, e.g., “access device 120A", noting that fig. 2 is merely a different versions of fig. 1. Therefore, when fig. 2 is referred to in our discussion, it should be understood that the “public network 130” of fig. 1 is inherently in fig. 2. The same is true for fig. 4 as well) *to at least first and second wide area network links* (for *first link*, see fig. 2 “tunnel 135”, “primary tunnel” hereinafter, between “access device 120A” and “gateway 140A”, “primary gateway” hereinafter; for *second link*, see “tunnel 135”, “backup tunnel” hereinafter, between “access device 120A” and “gateway 140B”, “backup gateway” hereinafter; and for *wide area network*, see “public network 130” of fig. 1, which, as said above, is the network part of fig. 2 between the "access devices" and the "gateways"), *the first network link* ("primary tunnel”) *being less expensive to use than the second network link* (“backup tunnel”, and see “the primary gateway 140 [140A of fig. 2 – Examiner notes] advertises to devices on private network

150 a lower routing cost for routing traffic to client 110 than does the backup gateway 140 [140B of fig. 2 – Examiner notes]", [0088] lines 1-4, noting that the "lower routing cost" route "advertised" by "primary gateway 140A" is the "primary tunnel 135" of fig. 2);

monitoring the first network link ("Access device 120 can also be configured to send heartbeat messages (440) to each of gateways 140. … thereby directly monitoring critical communication through each of the gateways", [0067]) *for a bandwidth utilization level* (noting that said "monitoring critical communication" includes "failures" that "can occur at several points along the communication paths", [0058] lines 1-2, comprising, "for example, a communication link … may fail or become overly congested", [0058] lines 5-7, which "overly congested" is well known in the art to indicate *bandwidth utilization level* being "overly" high);

when the bandwidth utilization level on the first network link ("primary tunnel" cited above) *is more than a selected threshold* (Singh has to establish a well defined *threshold* in order to be able to determine above cited "overly congested" condition, which is critical for the "failover" operation shown in fig. 2 and discussed below), *directing outgoing calls over the second network link* ("backup tunnel" and see "The general approach to handling each of these types of failures [e.g. "overly congested" failure – Examiner notes] is to rapidly reroute communication from the tunnel 135 linking access device 120A and primary gateway 140A ["primary tunnel" – Examiner notes] to the tunnel 135 linking access device 120A and backup gateway 140B ["backup tunnel" – Examiner notes]", [0059] lines 1-5); *and*

when the bandwidth utilization level on the first network link ("primary tunnel") *is less than a selected threshold* (again Singh has to establish a well defined *threshold* in order to be able to determine condition below above cited "overly congested" situation, which is critical for not performing the "failover" operation shown in fig. 2), *redirecting outgoing calls over the first network link* (this is obvious to one skilled in the art because of three factor. Factor 1: In this case, the "primary tunnel" is not congested and thus there is no need for "failover" to any other "backup tunnel"; Factor 2: The "primary tunnel" is a "lower routing cost" link as cited above and thus one would like to utilize such, providing factor 1 is true; and Factor 3: Singh also discloses, see [0064], once a "failover" happens from "primary tunnel" to "backup tunnel", the "access device" then "begins and continues to try to reestablish a tunnel to the primary gateway", which means that as soon as Factor 1 becomes true again, e.g. "primary tunnel" is no longer "overly congested", the approach dictates a "go-back" to "primary tunnel").

Regarding claim 44, *wherein a local edge router* (fig. 2, e.g., "access device 120A") *is configured so that packets with destination ports within a defined range* (fig. 2 showing "primary tunnel 135" linking said "access device 120A" with *destination ports* of "primary gateway 140A", which *ports* will have to be *within a defined range* as well known in the art) *are routed to the first network link* (naturally so, as shown in fig. 2, because *packets* to "primary gateway 140A" *are routed to* the "primary tunnel 135" cited above) *and packets with ports in a second different range* (fig. 2 showing "backup tunnel 135" linking said "access device 120A" with *destination ports* of "backup gateway 140B", which *ports* will have to be *in a second different range* not to be confused with

that of the “primary gateway 140A”) *are routed to the second network link* (naturally so, as shown in fig. 2, because *packets* to "backup gateway 140B" *are routed to* the “backup tunnel 135” cited above) *and wherein, when outgoing calls are to be directed to the first link* (“primary tunnel”), *the first range is used for destination ports* (ports of “primary gateway 140A”) *of outgoing packets* (packets from "access device 120A" to "primary gateway 140A" which will have to use *the first range for destination ports* of the "primary gateway 140A" over the “primary tunnel” or otherwise the packets will not be able to reach the “primary gateway 140A”), *wherein when outgoing calls are to be directed to the second link* (“backup tunnel”), *the second range is used for destination ports of outgoing packets* (this is the same as that for *the first link* discussed above), *and wherein the first and second ranges are not overlapping* (naturally so and see also fig. 2 showing *not overlapping* “primary/backup tunnel/gateway” and their respective ports each having *first and second ranges* of ports).

It is noted that Sign, when disclosing *directing/redirecting calls*, does not disclose, regarding claims 43 and 44, such calls being *voice* calls.

Garg discloses method and apparatus for performing admission control in a communication network” (Title) wherein “A network utilization characteristic (NUC) provides a measure of network capacity” (Abstract lines 6-8). Garg’s invention comprises:

Regarding claims 43/44, direct/redirect *voice* calls (see fig. 4 step 420 for determining “is new flow VoIP?” meaning *voice* calls, step 430 for checking utilization level “$\sum$ NUCs ≤ NUCTotalMax?”, steps 460/470 as "YES" branch of step 430 ending up

with "flow is admitted" and steps 445→450→455 or 445→450→460→470 as "NO" branch of step 430 ending up with "flow is not admitted" or "flow is admitted" depending on the results of step 450 checking "∑ adjusted NUCs ≤ NUCTotalMax?". All of said steps are dealing with *voice calls* in view of the "network utilization characteristic (NUC)").

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Singh by adding the *voice* or VoIP feature of Garg to Singh in order to provide a enhanced data network wherein "a VoIP call can be established with a device" when "the network has sufficient resources to accommodate the call or it is possible to make such resources available by curtailing ongoing connections" (Garg, Abstract lines 3-6).

Allowable Subject Matter

10. Claims 5, 6, 15-17, 20, 27, 28, 37-39 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Among aforementioned claims, claims 5/27 and claims 15/37 contain the following underlined features that appear to be allowable over the applied arts:

Claims 5/27 recite the following logic combination of sub-steps (not each individual step) that appears to be allowable.

> ...
> *(b1) adjusting the one or more QoS metrics to reflect placing the new live voice communication with the first selected codec;*
> *(b2) determining whether the adjusted one or more QoS metrics are acceptable in view of selected thresholds; and*
> *(b3) applying the following rules:*

(b3i) … (details omitted)
(b3ii) … (details omitted)

Claims 6 and 28 depend from claims 5 and 27 respectively.

Claims 15/37 recites the following equation that appears to be allowable:

… maximum threshold provided by the equation: Maximum Threshold = Allocated Link VoIP Bandwidth - Bandwidth required for one VoIP call, …

Claims 16/17/20 and 38/39/42 depend from claims 15 and 37 respectively.

Response to Arguments

11. Applicant's arguments filed on 9/9/2008 have been fully considered but they are not persuasive.

As stated earlier in this Office Action, when filing RCE, Applicant did not present any new/further remarks/arguments than those presented in the 9/9/2008 After-Final amendments. Since Examiner has fully addressed the remarks/arguments thereof with an Advisory Action on 9/29/2008, there is no need to repeat such and Applicant is referred to said Advisory Action for details of Examiner's position, concluding that the arguments were not persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW LAI whose telephone number is (571)272-9741. The examiner can normally be reached on M-F 7:30-5:00 EST, Off alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew Lai/
Examiner, Art Unit 2416

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2416